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File 653:US Patents Fulltext 1980-1989
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(c) format only 1998 The Dialog Corp.
*File 654: Reassignment data now current through 05/14/98.
Reexamination, extension, expiration, reinstatement updated weekly.

Set	Items	Description

? set hi ;**set hi**

Hilight option is not available in file(s) 77
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Set	Items	Description
S1	366	(ERYTHROCYT? OR RED)(4N)(ADENYLATE(W)KINASE)
S2	227	RD (unique items)

? t s2/7/2,3,20,24,32,50,91,104,145,165,171,174

2/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1998 Dialog Corporation. All rts. reserv.

09371773 98069130
Erythrocyte adenylate kinase isoenzyme as a marker for hemolysis.
Thomas G; Murthy VV
Department of Pathology, Albert Einstein College of Medicine, Bronx, New York, USA.
J Clin Lab Anal (UNITED STATES) 1997, 11 (6) p351-6, ISSN 0887-8013 Journal Code: JLA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
The presence in serum of **adenylate kinase** isoenzyme

originating from **erythrocyte** can be useful as a marker for detecting hemolysis. We have presented preliminary evidence for identifying hemolytic anemia patients earlier by determining erythrocyte AK isoenzyme activity in serum (or plasma) rather than using measurement of plasma hemoglobin concentration. This test being quite specific for hemolysis should find use as a quick method for estimating the extent of in vivo hemolysis in hemolytic patients earlier than heretofore possible.

2/7/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09138555 97362603
Differentiation and resolution of **erythrocyte** and muscle **adenylate kinase** activities in serum by electrophoresis.
Murthy VV; Ali F; Burns ER
Department of Pathology, Albert Einstein College of Medicine, The Bronx, New York, USA.
J Clin Lab Anal (UNITED STATES) 1997, 11 (4) p235-7, ISSN 0887-8013 Journal Code: JLA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Adenylate kinase activity originating from **erythrocytes** has been shown to be distinct from muscle adenylate kinase or myokinase activity, until now considered to be identical enzyme activities. The two activities can be differentiated by electrophoretic fractionation, thus making it possible to quantify the **erythrocyte adenylate kinase** activity present in serum.

2/7/20 (Item 20 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05530841 89133735
The effect of hemolysis on creatine kinase determination [see comments]
Greenson JK; Farber SJ; Dubin SB
Department of Pathology and Laboratory Medicine, Cedars-Sinai Medical Center, Los Angeles, CA 90048.
Arch Pathol Lab Med (UNITED STATES) Feb 1989, 113 (2) p184-5, ISSN 0003-9985 Journal Code: 79Z
Comment in Arch Pathol Lab Med 1992 Jan;116(1):7-8
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Hemolysis can cause falsely elevated creatine kinase (CK) values when spectrophotometric methods of measurement are used. This apparent increase in CK is due to the **red** blood cell enzyme **adenylate kinase**. In an attempt to reduce this interference, most commercial CK kits employ adenosine monophosphate and/or diadenosine pentaphosphate as adenylate kinase inhibitors. To determine whether hemolyzed specimens should be accepted for testing, we measured the CK values of 26 serum samples, each with six different concentrations of added hemolysate. The results showed that hemolysis had an additive effect on CK, with an average increase in CK of approximately 10 U/L for every 1 g/L of hemoglobin. In most settings, this increase is not clinically significant. In the case of massive hemolysis, the hemoglobin concentration of the serum can be measured to correct the apparent CK value. The exclusion of hemolyzed specimens is unnecessary.

2/7/24 (Item 24 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04427447 84289246
Leakage of adenylate kinase from stored blood cells.
Olsson T; Gulliksson H; Palmeborn M; Bergstrom K; Thore A
J Appl Biochem (UNITED STATES) Dec 1983, 5 (6) p437-45, ISSN 0161-7354 Journal Code: HEA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
The bioluminescent firefly luciferase assay for ATP was used to measure adenylate kinase activity in plasma. The formation of ATP from ADP was measured continuously in a coupled assay using a luminometer. Optimal analytical conditions were determined for the coupled reaction. The assay was used to follow accumulation of adenylate kinase in plasma of different preparations of stored **red** blood cells. **Adenylate kinase** was found to be released concomitantly with hemoglobin during aging. There was a high degree of correlation between the amount of accumulated hemoglobin and adenylate kinase. The assay was also used to measure lysis of stored platelets during aging.

2/7/32 (Item 32 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04307438 81134512
The primary cause of hemolysis in enzymopathies of anaerobic glycolysis: a viewpoint.
Valentine WN; Paglia DE
Blood Cells (GERMANY, WEST) 1980, 6 (4) p819-29, ISSN 0340-4684 Journal Code: A8H
Languages: ENGLISH
Document type: JOURNAL ARTICLE

2/7/50 (Item 50 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

03055042 79064127
Anion-exchange chromatography of **erythrocytic** and muscle **adenylate kinase** and its effect on the serum creatine kinase isoenzyme assays.
Klein B; Jeunelot CL
Clin Chem (UNITED STATES) Dec 1978, 24 (12) p2168-70, ISSN 0009-9147 Journal Code: DBZ
Languages: ENGLISH
Document type: JOURNAL ARTICLE
We determined the elution profile of erythrocytic and muscle adenylate kinases (EC 2.7.4.3) in the Roche chromatographic creatine kinase procedure and studied the interference these enzymes would cause in the isolation and assay of serum creatine kinase (EC 2.7.3.2) isoenzymes. Both adenylate kinases co-elute with the creatine kinase MM fraction and do not interfere with the isolation or assay of the MB fraction.

2/7/91 (Item 3 from file: 5)

DIALOG(R)File 5:BIOSIS PREVIEWS(R)

13354942 BIOSIS Number: 99354942
Clinical utility of serum **erythrocyte adenylate kinase**, a new marker for hemolysis
Kale A; Murthy V V; Burns E R
Dep. Pathol., Albert Einstein Coll. Med., Bronx, NY, USA
Blood 88 (10 SUPPL. 1 PART 1-2). 1996. 5B.
Full Journal Title: Thirty-eighth Annual Meeting of the American Society of Hematology, Orlando, Florida, USA, December 6-10, 1996. Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 002 Ref. 027834

2/7/104 (Item 16 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

4210680 BIOSIS Number: 26063023
ADENYLATE KINASE FROM HUMAN **ERYTHROCYTES** AND PLATELETS
NEALON D A; PRIDGAR E; HENDERSON A R
CTR. LABS. RES., NY STATE DEP. HEALTH, ALBANY, NY 12201.
34TH NATIONAL MEETING OF THE AMERICAN ASSOCIATION FOR CLINICAL CHEMISTRY, ANAHEIM, CALIF., USA, AUG. 8-13, 1982. CLIN CHEM 28 (7). 1982. 1606.
CODEN: CLCHA
Language: ENGLISH

2/7/145 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

10601611 EMBASE No: 98029364
Effects of haemolysis on the Boehringer Mannheim creatine kinase-MB assay
Donnelly J.G.
J.G. Donnelly, Department of Laboratory Medicine, Ottawa Civic Hospital, University of Ottawa School Medicine, 1053 Carling Avenue, Ottawa, Ont. K1Y 4E9 Canada
Annals of Clinical Biochemistry (United Kingdom) , 1998, 35/1 (143-144)
CODEN: ACBOB ISSN: 0004-5632
DOCUMENT TYPE: Journal Article
LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH
NUMBER OF REFERENCES: 3
The Boehringer Mannheim (BM; Boehringer Mannheim, Laval Quebec, Canada) assay for creatine kinase-B (CK-MB) measures the residual catalytic activity of the creatine kinase-B subunit after immunoinhibition of the M subunit. During our evaluation of this assay for implementation on the Hitachi 917 analyser we observed a profound positive interference from haemolysis. While the effect of **erythrocyte adenylate kinase** is widely known to users of CK assays, we found that there was significant interference even when the haemolysis could not be visually detected. We investigated the extent of this interference in order to determine the suitability of haemolysed specimens for this assay.

2/7/165 (Item 22 from file: 73)
DIALOG(R)File 73:EMBASE

817455 EMBASE No: 77200490
Agarose thin layer electrophoresis for the determination of **red** cell **adenylate kinase** (EC 2.7.4.3) polymorphisms
AGAROSE DUNNSCHICHT ELEKTROPHORESE ZUR BESTIMMUNG DER ERYTHROZYTAREN ADENYLATKINASE (EC 2.7.4.3) POLYMORPHISMEN
Tsuji T.; Weissmann J.
Abt. Rechtsmed., Med. Hochsch., Lubeck GERMANY, WEST
ARZTL.LAB. (GERMANY, WEST) , 1976, 22/11 (363-365)
CODEN: AELAA
LANGUAGES: GERMAN
A simple method for the determination of AK phenotypes by means of agarose thin layer electrophoresis is reported and compared with the agar and CAM methods. Separation was excellent and the spots were well demarcated. The results were better than those obtained with the other two methods.

2/7/171 (Item 28 from file: 73)
DIALOG(R)File 73:EMBASE

462506 EMBASE No: 76043888
Studies on storage induced changes of isoenzyme patterns (PGM, AK, ADA) by means of cellulose acetate membrane (CAM) electrophoresis
UNTERSUCHUNGEN UBER LAGERUNGSBEDINGTE VERANDERUNGEN VON ISOENZYMMUSTERN (PGM, AK, ADA) MIT HILFE DER CAF ELEKTROPHORESE
Berndt H.; Kox N.
Abt. Immunol. Transf. Med., Med. Hochsch., Lubeck GERMANY, WEST
ARZTL.LAB. (GERMANY, WEST) , 1975, 21/3 (87-97)
CODEN: AELAA
LANGUAGES: GERMAN

2/7/174 (Item 31 from file: 73)
DIALOG(R)File 73:EMBASE

290293 EMBASE No: 75081287
Isolation and properties of isoenzymes of adenylate kinase
REINIGUNG UND EIGENSCHAFTEN VON ISOENZYMEN DER ADENYLATKINASE
Mebs D.
Zent. Rechtsmed., Univ. Frankfurt/M. GERMANY, WEST
BEITR.GERICHTL.MED. (--) , 1973, No:31 (295-296)
CODEN: BEGMA
LANGUAGES: GERMAN
The isoenzymes of adenylate kinase were isolated from the hemolysate of pig erythrocytes by ammonium sulfate fractionation, pH treatment, gel filtration and ion exchange chromatography. The enzyme specifically catalyzes the reaction 2 adenosine diphosphate < - > adenosine triphosphate + adenosine monophosphate. Its molecular weight was found to be 23,500 by gel filtration.
? t s2/pn/226

>>>No matching display code(s) found in file(s): 8, 34, 50, 73, 155-156, 305, 376, 434, 442

2/PN/226 (Item 1 from file: 653)
DIALOG(R)File 653:(c) format only 1998 The Dialog Corp. All rts. reserv.

PATENT NO.: 4,220,714
ISSUED: September 02, 1980 (19800902)
? s s2 and (hemolysis or hemolyzed)

227 S2
68804 HEMOLYSIS
2273 HEMOLYZED
S3 16 S2 AND (HEMOLYSIS OR HEMOLYZED)
? t s3/7/1-16

3/7/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09371773 98069130
Erythrocyte adenylate kinase isoenzyme as a marker for **hemolysis**.
Thomas G; Murthy VV
Department of Pathology, Albert Einstein College of Medicine, Bronx, New York, USA.
J Clin Lab Anal (UNITED STATES) 1997, 11 (6) p351-6, ISSN 0887-8013 Journal Code: JLA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
The presence in serum of **adenylate kinase** isoenzyme originating from **erythrocyte** can be useful as a marker for detecting **hemolysis** . We have presented preliminary evidence for identifying hemolytic anemia patients earlier by determining erythrocyte AK isoenzyme activity in serum (or plasma) rather than using measurement of plasma hemoglobin concentration. This test being quite specific for **hemolysis** should find use as a quick method for estimating the extent of in vivo **hemolysis** in hemolytic patients earlier than heretofore possible.

3/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09138555 97362603
Differentiation and resolution of **erythrocyte** and muscle **adenylate kinase** activities in serum by electrophoresis.
Murthy VV; Ali F; Burns ER
Department of Pathology, Albert Einstein College of Medicine, The Bronx, New York, USA.
J Clin Lab Anal (UNITED STATES) 1997, 11 (4) p235-7, ISSN 0887-8013 Journal Code: JLA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Adenylate kinase activity originating from **erythrocytes** has been shown to be distinct from muscle adenylate kinase or myokinase activity, until now considered to be identical enzyme activities. The two activities can be differentiated by electrophoretic fractionation, thus making it possible to quantify the **erythrocyte adenylate kinase** activity present in serum.

3/7/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08795088 97045577
[Hemolytic anemia due to abnormalities in erythrocyte nucleotide metabolism]
Masuda M; Mizoguchi H
Department of Hematology, Tokyo Women's Medical College.
Nippon Rinsho (JAPAN) Sep 1996, 54 (9) p2473-7, ISSN 0047-1852
Journal Code: KIM
Languages: JAPANESE Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW LITERATURE English Abstract
Abnormalities in erythrocyte nucleotide metabolism are associated with hereditary nonspherocytic hemolytic anemia. Deficiency of adenylate kinase and pyrimidine 5'-nucleotidase and hyperactivity of adenosine deaminase shorten the **red** cell lifespan. Deficiency of **adenylate kinase** has been reported in four different families. Although in one family, total absence of this enzymatic activity was documented in one hematologically normal sibling, there is doubt about the capacity of this single enzyme deficiency to produce **hemolysis** . A deficiency of pyrimidine 5'-nucleotidase is a cause of hemolytic anemia characterized by red cells with basophilic stippling. This enzyme has been reported to catalyze the hydrolytic dephosphorylation of pyrimidine 5'-ribose monophosphate. Red cells of patients contain an increased concentration of pyrimidine nucleotides and reduced form of glutathione. In hyperactivity, the adenosine deaminase activity in erythrocytes may be increased to 100 times the normal level. The high adenosine deaminase activity of erythrocytes depletes adenine nucleotides, inhibiting its metabolism. (15 Refs.)

3/7/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08224518 94322148
Adenylate kinase mimics creatine kinase-MM isoenzyme in a CK isoenzyme electrophoresis assay.
Murthy VV
Department of Laboratory Medicine, Albert Einstein College of Medicine, Bronx, New York.
J Clin Lab Anal (UNITED STATES) 1994, 8 (3) p140-3, ISSN 0887-8013
Journal Code: JLA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Adenylate kinase activity (AK) originating from **erythrocytes**, present in **hemolyzed** serum behaves like creatine kinase MM isoenzyme (CK-MM) in some CK electrophoresis assays that employ, in their visualization reagent kits, adenosine monophosphate (AMP) as the sole inhibitor of AK, rather than a combination of AMP and a more potent inhibitor of erythrocyte AK, diadenosine pentaphosphate (Ap5A), to inhibit all contaminating-AK activities in serum and quantify only the CK isoenzyme activities in serum following electrophoretic fractionation on agarose gel. This can spuriously overestimate the CK-MM fraction and thereby result in underestimation of CK-MM or CK-BB isoenzymes if present. A **hemolyzed** serum sample obtained from an elderly patient was erroneously reported as containing low CK-MB due to such overestimation of CK-MM fraction in the sample. Supplementing the AMP already present in the visualization reagent formulation, used to estimate CK isoenzyme concentration in serum, with Ap5A can eliminate or effectively minimize AK interference, especially that

caused by **hemolysis** , and thereby prevent reporting false-negative CK-MB result obtained with CK isoenzyme electrophoresis assays.

3/7/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05530841 89133735
The effect of **hemolysis** on creatine kinase determination [see comments]
Greenson JK; Farber SJ; Dubin SB
Department of Pathology and Laboratory Medicine, Cedars-Sinai Medical Center, Los Angeles, CA 90048.
Arch Pathol Lab Med (UNITED STATES) Feb 1989, 113 (2) p184-5, ISSN 0003-9985 Journal Code: 79Z
Comment in Arch Pathol Lab Med 1992 Jan;116(1):7-8
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Hemolysis can cause falsely elevated creatine kinase (CK) values when spectrophotometric methods of measurement are used. This apparent increase in CK is due to the **red** blood cell enzyme **adenylate kinase**. In an attempt to reduce this interference, most commercial CK kits employ adenosine monophosphate and/or diadenosine pentaphosphate as adenylate kinase inhibitors. To determine whether **hemolyzed** specimens should be accepted for testing, we measured the CK values of 26 serum samples, each with six different concentrations of added hemolysate. The results showed that **hemolysis** had an additive effect on CK, with an average increase in CK of approximately 10 U/L for every 1 g/L of hemoglobin. In most settings, this increase is not clinically significant. In the case of massive **hemolysis**, the hemoglobin concentration of the serum can be measured to correct the apparent CK value. The exclusion of **hemolyzed** specimens is unnecessary.

3/7/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04404283 83266230
Metabolic compensation for profound **erythrocyte adenylate kinase** deficiency. A hereditary enzyme defect without hemolytic anemia.
Beutler E; Carson D; Dannawi H; Forman L; Kuhl W; West C; Westwood B
J Clin Invest (UNITED STATES) Aug 1983, 72 (2) p648-55, ISSN 0021-9738 Journal Code: HS7
Contract/Grant No.: HL 25552, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE
A child with hemolytic anemia was found to have severe **erythrocyte adenylate kinase** (AK) deficiency, but an equally enzyme-deficient sibling had no evidence of **hemolysis**. No residual enzyme activity was found in erythrocytes by spectrophotometric methods that could easily have detected 0.1% of normal activity. However, concentrated hemolysates were shown to have the capacity to generate small amounts of ATP and AMP from ADP after prolonged incubation. Hemolysates could also catalyze the transfer of labeled gamma-phosphate from ATP to ADP. Intact erythrocytes were able to transfer phosphate from the gamma-position of ATP to the beta-position, albeit at a rate substantially slower than normal. They could also incorporate 14C-labeled adenine into

ADP and ATP. Thus, a small amount of residual AK-like activity representing about 1/2,000 of the activity normally present could be documented in the deficient erythrocytes. The residual activity was not inhibited by N-ethylmaleimide, which completely abolishes the activity of the normal AK1 isozyme of erythrocytes. The minute amount of residual activity in erythrocytes could represent a small amount of the AK2 isozyme, which has not been thought to be present in erythrocytes, or the activity of erythrocyte guanylate kinase with AMP substituting as substrate for GMP. Peripheral blood leukocytes, cultured skin fibroblasts, and transformed lymphoblasts from the deficient subject manifested about 17, 24, and 74%, respectively, of the activity of the concurrent controls. This residual activity is consistent with the existence of genetically independent AK isozyme, AK2, which is known to exist in these tissues. The cause of **hemolysis** in the proband was not identified. Possibilities include an unrelated enzyme deficiency or other erythrocyte enzyme defect and intraction of another unidentified defect with AK deficiency.

3/7/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04401727 83228082
Red cell **adenylate kinase** deficiency associated with hereditary nonspherocytic hemolytic anemia: clinical and biochemical studies.
Miwa S; Fujii H; Tani K; Takahashi K; Takizawa T; Igarashi T
Am J Hematol (UNITED STATES) Jun 1983, 14 (4) p325-33, ISSN 0361-8609 Journal Code: 3H4
Languages: ENGLISH
Document type: JOURNAL ARTICLE
We report here a case of **red** cell **adenylate kinase** (AK) deficiency associated with hereditary hemolytic anemia. The proband is a 10-year-old Japanese girl. Her physical and mental development was normal. She has shown moderate to mild hemolytic anemia since the neonatal period and hepatosplenomegaly. The red cell AK activity was 44% of normal. Contents of red cell glycolytic intermediates and adenine nucleotides were normal when compared with a comparable reticulocyte-rich control. Glucose consumption and lactate formation were normal. Hexose monophosphate shunt activity was somewhat lower than that of a comparable reticulocyte-rich control. There were no significant differences in the contents of adenine nucleotides between the younger and older red cells of the patient. Enzymatic characterization by hemolysate revealed that the patient's AK had an increased Michaelis constant for adenosine diphosphate and slight thermal instability. The patient's enzyme migrated approximately half-way between the AK 1 and AK 2 position on starch-gel electrophoresis. The mode of inheritance of this case is obscure. The mechanism of **hemolysis** might be a structural gene mutation that caused altered electrophoretic and kinetic properties.

3/7/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04307438 81134512
The primary cause of **hemolysis** in enzymopathies of anaerobic glycolysis: a viewpoint.
Valentine WN; Paglia DE
Blood Cells (GERMANY, WEST) 1980, 6 (4) p819-29, ISSN 0340-4684

Journal Code: A8H
Languages: ENGLISH
Document type: JOURNAL ARTICLE

3/7/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

03325189 81013018
Increased creatine kinase activities associated with haemolysis.
Bais R; Edwards JB
Pathology (AUSTRALIA) Apr 1980, 12 (2) p203-7, ISSN 0031-3025
Journal Code: OTA
Languages: ENGLISH
Document type: JOURNAL ARTICLE
The effect of haemolysis on creatine kinase activity has been investigated. The presence of **adenylate kinase** released from **erythrocytes** increases the apparent creatine kinase activity. This can be overcome by the addition of 10 mumol/l of diadenosine pentaphosphate to the reagents.

3/7/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

03029062 77024503
Creatine kinase in serum: 2. Interference of adenylate kinase with the assay.
Szasz G; Gerhardt W; Gruber W; Bernt E
Clin Chem (UNITED STATES) Nov 1976, 22 (11) p1806-11, ISSN 0009-9147
Journal Code: DBZ
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Interference of adenylate kinase with Oliver's method [Biochem. J. 61, 116 (1955)] for creatine kinase is usually suppressed by including an adenylate kinase inhibitor, AMP. We studied the kinetics and compared the inhibition capacities of AMP and diadenosine pentaphosphate. Both are competitive inhibitors, AMP being markedly weaker, with a Ki of about 300 mumol/liter for **adenylate kinase** from **erythrocyte** , muscle, and liver. AMP also weakly inhibitis creatine kinase. Diadenosine pentaphosphate inhibits **erythrocyte** and muscle **adenylate kinase** strongly (Ki about 0.03 mumol/liter), the liver isoenzyme less strongly (Ki about 3 mumol/liter), and has no effect on creatine kinase up to 100 mumol/liter. All three adenylate kinases may be present in a patinet's serum, causing sample blanks to be high in a creatine kinase assay that lacks inhibitors. In acute hepatic damage, liver adenylate kinase activity in serum can be grossly increased. Use of sufficient diadenosine pentaphosphate alone for complete inhibition is relatively expensive. Consequently, we recommend a combination of both inhibitors. Diadenosine pentaphosphate, 10 mumol, combined with 5 mmol of AMP per liter inhibits **adenylate kinase** from **erythrocytes** and muscle by 97% and from liver by 95%.

3/7/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

00214938 68002942
The **adenylate kinase** of human plasma, **erythrocytes** and platelets in relation to the degradation of adenosine diphosphate in plasma.
Haslam RJ; Mills DC
Biochem J (ENGLAND) Jun 1967, 103 (3) p773-84, ISSN 0006-2936
Journal Code: 9YO
Languages: ENGLISH
Document type: JOURNAL ARTICLE

3/7/12 (Item 1 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

13354942 BIOSIS Number: 99354942
Clinical utility of serum **erythrocyte adenylate kinase**, a new marker for **hemolysis**
Kale A; Murthy V V; Burns E R
Dep. Pathol., Albert Einstein Coll. Med., Bronx, NY, USA
Blood 88 (10 SUPPL. 1 PART 1-2). 1996. 5B.
Full Journal Title: Thirty-eighth Annual Meeting of the American Society of Hematology, Orlando, Florida, USA, December 6-10, 1996. Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 002 Ref. 027834

3/7/13 (Item 2 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

3278089 BIOSIS Number: 71000488
INCREASED CREATINE KINASE EC-2.7.3.2 ACTIVITIES ASSOCIATED WITH **HEMOLYSIS**
BAIS R; EDWARDS J B
DIV. CLIN. CHEM., INST. MED. VET. SCI., FROME RD., ADELAIDE, S. AUST. 5000, AUST.
PATHOLOGY 12 (2). 1980. 203-207. CODEN: PTLGA
Full Journal Title: Pathology
Language: ENGLISH
The effect of **hemolysis** on creatine kinase [EC 2.7.3.2] activity was investigated. The presence of **adenylate kinase** released from **erythrocytes** increases the apparent creatine kinase activity. This can be overcome by the addition of 10 .mu.mol/l of diadenosine pentaphosphate to the reagents.

3/7/14 (Item 3 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

3159871 BIOSIS Number: 20022278
EVALUATION OF NEW CREATINE KINASE FORMULATION ON ABBOTT BI CHROMATIC ANALYZERS
NERI B P; OLSON R M; ELSER R C
ABBOTT DIAGNOSTICS, N. CHICAGO, IL 60064.
JOINT MEETING OF THE AMERICAN ASSOCIATION FOR CLINICAL CHEMISTRY AND THE CANADIAN SOCIETY OF CLINICAL CHEMISTS, BOSTON, MASS., USA, JULY 20-25, 1980. CLIN CHEM 26 (7). 1980. 996-997. CODEN: CLCHA

Language: ENGLISH

3/7/15 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

10601611 EMBASE No: 98029364
Effects of haemolysis on the Boehringer Mannheim creatine kinase-MB assay
Donnelly J.G.
J.G. Donnelly, Department of Laboratory Medicine, Ottawa Civic Hospital, University of Ottawa School Medicine, 1053 Carling Avenue, Ottawa, Ont. K1Y 4E9 Canada
Annals of Clinical Biochemistry (United Kingdom) , 1998, 35/1 (143-144)
CODEN: ACBOB ISSN: 0004-5632
DOCUMENT TYPE: Journal Article
LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH
NUMBER OF REFERENCES: 3
The Boehringer Mannheim (BM; Boehringer Mannheim, Laval Quebec, Canada) assay for creatine kinase-B (CK-MB) measures the residual catalytic activity of the creatine kinase-B subunit after immunoinhibition of the M subunit. During our evaluation of this assay for implementation on the Hitachi 917 analyser we observed a profound positive interference from haemolysis. While the effect of **erythrocyte adenylate kinase** is widely known to users of CK assays, we found that there was significant interference even when the haemolysis could not be visually detected. We investigated the extent of this interference in order to determine the suitability of haemolysed specimens for this assay.

3/7/16 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

957323 EMBASE No: 78125886
Carrier detection in X linked recessive (Duchenne) muscular dystrophy: pyruvate kinase isoenzymes and creatine phosphokinase in serum and blood cells
Smith I.; Thomson W.H.S.
Res. Lab., Knightswood Hosp., Glasgow UNITED KINGDOM
CLIN.CHIM.ACTA (NETHERLANDS) , 1977, 78/3 (439-451)
CODEN: CCATA
LANGUAGES: ENGLISH
Allosterism allows individual assay of both isoenzymes, one abundant in muscle, of pyruvate kinase (PK), recently reported superior to serum creatine phosphokinase (CPK) in detecting patients with and female carriers of X-linked recessive (Duchenne) muscular dystrophy (DMD). Extensive comparative studies did not support these findings and confirmed the marked superiority of CPK over variants of PK or other enzymes in sensitivity, stability and convenience. Deducting the adenylate kinase increment (AKI) further refined the CPK assay, eliminating the effect of **hemolysis** in diagnosis and enabling studies of blood cell content. Both leucocytes and erythrocytes liberated PK and lactate dehydrogenase (LDH) after brief chilling or disruption. Only erythrocytes showed a CPK content, however, constantly adjusted to match that of serum as if by free cell membrane passage, but less accomodating to a sudden large influx of CPK than of LDH, where an apparent buffering effect could account for differences in clinical response.
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